WIRELESS TELECOMMUNICATIONS BUREAU

FACT SHEET

FEDERAL COMMUNICATIONS COMMISSION
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INFORMATION SHEET
900 MHz Specialized Mobile Radio Service

The Specialized Mobile Radio (SMR) service was first established by the Commission to provide land mobile communications on a commercial (*i.e.*, for profit) basis. A traditional SMR system consists of one or more base station transmitters, one or more antennas, and end user radio equipment which often consists of a mobile radio unit either provided by the end user or obtained from the SMR operator for a fee. The base station receives either telephone transmissions from end users or low power signals from end user mobile radios. Those messages are then either routed through phone lines or retransmitted over designated channels with a much stronger radio signal so that other radios can hear the original message.

Thus, SMR end users may operate in either an "interconnected" mode or a "dispatch" mode. Interconnected mode interconnects mobile radio units with the public switched telephone network (PSTN). An end user may thus transmit a message with its mobile radio unit to the SMR base station. The call will then be routed to the local PSTN. This allows the mobile radio unit to function as a mobile telephone. Dispatch mode allows two-way, over the air, voice communications between two or more mobile units (*e.g.*, between a car and a truck) or between mobile units and fixed units (*e.g.*, between the end user's office and a truck). Typical SMR customers using dispatch communications include construction companies with several trucks at different jobs or on the road, with a dispatch operation in a central office.

In addition to the separate modes of use available to end users, SMR systems also consist of two distinct types: conventional and trunked systems. A conventional system allows an end user the use of only one channel. If someone else is already using that end user's assigned channel, the end user must wait until the channel is available. In contrast, a trunked system contains microprocessing capabilities which automatically search for an open channel. This search capability allows more users to be served at any one time. A majority of the current SMR systems are trunked systems.

Although SMRs are primarily used for communications, systems are also being developed for data and facsimile services. Additionally, the development of a digital, rather than analog, SMR marketplace is allowing a slew of new features and services, such as two-way acknowledgment paging and inventory tracking, credit card authorization, automatic vehicle location, fleet management, inventory tracking, remote database access, and voicemail. The growth of SMRs has been significant due to these new developments. For example, at the end of 1994, approximately 1.8 million vehicles and portable units were served by SMR systems.

Service Areas and Licensing Blocks

The 900 MHz SMR service was first established in 1986 and initially employed a two-phase licensing process. In Phase I, licenses were assigned in 46 "Designated Filing Areas" (DFAs) comprised of the top 50 markets. Following Phase I, the Commission envisioned licensing facilities in areas outside these markets in Phase II. In the meantime, however, licensing outside the DFAs was frozen while the Commission completed the Phase I

process. The freeze on licensing outside DFAs continued until 1993, when Congress reclassified most SMR licensees as Commercial Radio Service (CMRS) providers and established the authority to use competitive bidding to select from among mutually exclusive applicants for certain licensed services. During the freeze, however, some DFA licensees elected to become licensed for secondary sites (*i.e.*, facilities that may not cause interference to primary licensees and must accept interference from primary licenses) outside their DFAs to accommodate system expansion.

In response to Congress' reclassification of the SMR service in 1993, the Commission revised its Phase II proposals and established a broad outline for the completion of licensing in the 900 MHz SMR band. In general, the Commission concluded that (1) the 900 MHz SMR band will be divided into 20 ten-channel blocks in each of 51 service areas based on Rand McNally's Major Trading Areas ("MTAs"), (2) licensing of mutually exclusive applicants for this spectrum will be based on competitive bidding, and (3) incumbent licensees for primary sites in the band will retain the right to operate under their existing licenses, but will be required to obtain relevant MTA licenses (or consent of the MTA licensee) in order to expand their systems.

Two distinct sets of frequencies are available for SMR operation: 800 MHz and 900 MHz. A total of approximately nineteen MHz of spectrum is available for use by SMRs, fourteen MHz in the 800 MHz band and five MHz in the 900 MHz band. The 800 MHz SMR systems operate on 50 kHz channels (2 - 25 kHz channels paired), while the 900 MHz systems operate on 25 kHz channels (2 - 12.5 kHz channels paired). Due to the different sizes of the channel bandwidths allocated for 800 MHz and 900 MHz systems, the radio equipment used for 800 MHz SMRs is not compatible with the equipment used for 900 MHz SMRs.

The 200 channel pairs in the 900 MHz service have been allocated in the 896-901 MHz and 935-940 MHz bands. Each MTA license gives the licensee the right to operate throughout the MTA on the designated channels, except where a co-channel incumbent licensee is operating already.

Treatment of Incumbents

Incumbent SMR systems in the 900 MHz MTA blocks are entitled to co-channel protection by MTA licensees, as well as adjacent channel interference protection. Incumbent systems, however, are not allowed to expand beyond existing service areas unless they obtain the MTA license for the relevant channels.

Summary of Service Rules

Coverage: 1/3 of service area population in 3 years; 2/3 of service area population in 5 years. Alternatively, at the five year mark, submit a showing of "substantial service." *See* 47 C.F.R. § 90.665(c).

Interference:

Incumbents: MTA licensees must provide protection to incumbents by locating stations at least 70 miles (113 km) from incumbent's facilities or by complying with the short-spacing rule. *See* 47 C.F.R. § 90.621.

Secondary Sites: Secondary sites for which applications were filed on or before August 9, 1994, will be afforded complete co-channel protection. No secondary sites will be granted after the selection of MTA licensees. *See* 47 C.F.R. § 90.667(b).

Incumbents' Right to Move Within Service Area: Incumbents may modify or add sites so long as they do not exceed existing 40 dBu signal strength contour. *See* 47 C.F.R. § 90.667(a).

Loading Requirements: Loading requirements (70 mobiles per channel) have been retained for incumbents, but have been eliminated for MTA licensees. *See* 47 C.F.R. § 90.631.

Competitive Bidding

The Commission will award 1,020 MTA licenses for 900 MHz SMR through a simultaneous multiple round auction. In this simultaneous multiple round auction, all licenses will be offered at the same time. At the beginning of each round, bidders will place bids on the authorizations that they are interested in acquiring. After each round closes, the high bid amount on each license will be posted, and a new round will begin. This process continues until there is a bid submission round in which no new bids are placed on any of the 1,020 licenses. Once the auction winners are announced, long-form applications (Form 600s) will be processed in Gettysburg, and contested licenses will be referred to the Commercial Wireless Division.

The process of participating in the 900 MHz SMR auction is as follows:

1. Contact the FCC's Auction Contractor, Tradewinds International, Inc., at (202) 667-FCC1, and request a bidder information package.

2. After the bidder information package is received, complete the filing of the FCC Form 175 (as revised), indicating for which licenses you intend to bid. It is also necessary to read all certifications listed on the Form 175, and to submit any required exhibits.

3 . Submit the required upfront payment.

4 . Submit your bid(s) when the auction opens.

Summary of Auction Rules

Design and Grouping: Simultaneous multiple round bidding. *See* 47 C.F.R. § 90.802.

Upfront Payment: $0.02 per MHz-pop, as defined by the Commission in terms of activity units. *See* 47 C.F.R. § 90.807.

Treatment of Designated Entities:

Entrepreneurs' Block: None.

Bidding Credits: 10% for small businesses with gross revenues that are not more than $15 million for the preceding three years; 15% for very small businesses with gross revenues that are not more than $3 million for the three preceding years. *See* 47 C.F.R. § 90.810.

Reduced Down Payments: Available to small businesses. *See* 47 C.F.R. § 90.811.

Installment Payments: Different installment payment plans apply to different size small businesses. *See* 47 C.F.R. § 90.812.

- Plan A: pay interest only for first 2 years of license term, with interest accruing at Treasury note rate plus 2.5%; available to small businesses that fall under the $15 million definition.

- Plan B: pay interest only for five years, with interest accruing at the Treasury note rate without the additional 2.5%; available to small businesses that fall under the $3 million definition.

Reduced Upfront Payment: None.

Rural Telcos: Partitioning scheme is available, which allows rural telcos to acquire partitioned 900 MHz SMR licenses and, hence, prevents them from having to bid on an entire MTA license in order to obtain a license that covers their existing wireline service areas. *See* 47 C.F.R. § 90.813.

Rand-McNally Copyright Issue: Applicants may obtain information about entering into a copyright arrangement

with Rand-McNally for the use of its copyrighted MTA listings from the *Second Report and Order and Second Further Notice of Proposed Rule Making* in PR Docket No. 89-553, GN Docket No. 93-252, PP Docket No. 93-253, FCC 95-159, at ¶ 33, released April 17, 1995.

Additional Information

For additional information about participating in the 900 MHz SMR auction, call Tradewinds International, Inc., at (202) 667-FCC1. For general information, about the FCC auction process, contact the FCC's Auctions Hotline at (202) 418-1400. The FCC established the hotline to provide timely and accurate information to the public.

For more detailed information about the 900 MHz SMR auction in particular, prospective bidders should refer to the *Second Report and Order and Second Further Notice of Proposed Rule Making* in PR Docket No. 89-553, GN Docket No. 93-252, PP Docket No. 93-253, FCC 95-159, released April 17, 1995; and the *Second Order on Reconsideration and Seventh Report and Order* in PR Docket No. 89-553, PP Docket No. 93-253 and GN Docket No. 93-252, FCC 95-395 (released September 14, 1995). For additional general information on the SMR service, prospective bidders should review the *First Report and Order and Further Notice of Proposed Rule Making* in PR Docket No. 89-553, 8 FCC Rcd 1469 (1993); the *Third Report and Order* in GN Docket No. 93-252, 9 FCC Rcd 7988 (1994). Copies of FCC documents, including public notices, may be obtained for a fee by calling International Transcription Services, Inc., at (202) 857-3800. Additionally, prospective bidders may retrieve some of these documents from the FCC Internet node via *anonymous FTP@fcc.gov*.

For further information, phone (202) 418-1400.